TABLE 2.—*Free-air resultant winds (meters per second) based on pilot-balloon observations made near 7 a.m. (E.S.T.) during July 1934*

[Wind from N=360°, E=90°, etc.]

Altitude (m) m.s.l.	Albuquerque, N. Mex. (1,554 m)		Atlanta, Ga. (309 m)		Bismarck, N. Dak. (518 m)		Brownsville, Tex. (7 m)		Burlington, Vt. (132 m)		Cheyenne, Wyo. (1,873 m)		Chicago, Ill. (192 m)		Cleveland, Ohio (245 m)		Dallas, Tex. (154 m)		Havre, Mont. (762 m)		Jacksonville, Fla. (14 m)		Key West, Fla. (11 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
	°		°		°		°		°		°		°		°		°		°		°		°	
Surface	360	1.3	291	1.3	49	1.4	151	1.7	184	2.0	281	3.5	264	0.2	188	1.6	173	2.7	254	0.8	240	1.2	131	2.0
500	------	------	298	3.9	------	------	170	9.1	232	3.0	------	------	231	1.5	230	2.8	209	9.5	------	------	272	3.2	130	3.5
1,000	------	------	299	4.4	144	3.9	171	9.2	287	4.1	------	------	240	4.0	275	4.0	204	8.3	267	1.5	259	2.3	132	3.3
1,500	------	------	308	3.3	230	1.9	176	7.8	289	6.8	------	------	263	6.1	276	5.6	190	4.5	292	2.2	250	1.1	140	2.5
2,000	129	1.7	301	2.4	272	3.6	163	6.8	291	9.6	269	5.0	275	7.0	288	7.0	156	2.7	289	4.1	223	0.6	129	2.7
2,500	182	1.9	305	2.3	287	5.1	164	4.7	294	9.5	258	4.8	280	7.7	291	8.1	126	2.3	269	5.5	229	0.8	131	2.4
3,000	227	2.2	309	0.9	288	6.8	144	3.0	290	10.5	250	4.2	289	8.3	294	8.7	110	2.2	251	7.3	229	0.7	105	2.0
4,000	292	1.5	157	0.5	285	9.2	122	3.2	291	7.7	276	3.6	290	8.0	289	9.8	116	2.6	249	11.9	208	0.8	100	1.7
5,000	37	1.2	34	1.3	298	10.3	104	2.9	294	8.6	275	7.0	295	9.7	290	12.6	114	2.8	251	14.6	305	0.4	360	1.0

	Los Angeles, Calif. (217 m)		Medford, Oreg. (410 m)		Memphis, Tenn. (83 m)		New Orleans, La. (19 m)		Oakland, Calif. (8 m)		Oklahoma City, Okla. (402 m)		Omaha, Nebr. (306 m)		Phoenix, Ariz. (338 m)		Salt Lake City, Utah (1,294 m)		Sault Ste. Marie, Mich. (198 m)		Seattle, Wash. (14 m)		Washington, D.C. (10 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
	°		°		°		°		°		°		°		°		°		°		°		°	
Surface	68	0.1	302	0.8	186	1.3	267	1.0	289	1.2	172	3.4	88	1.0	69	1.3	151	4.1	359	0.4	124	1.0	195	0.1
500	113	1.7	289	1.4	243	6.2	237	3.3	262	2.9	189	6.8	164	2.6	263	0.8	------	------	302	0.4	171	0.5	256	1.6
1,000	16	0.9	287	1.9	257	3.7	216	2.8	300	4.9	219	12.3	214	7.7	261	2.2	------	------	298	3.6	85	0.6	307	2.3
1,500	293	2.2	234	0.4	276	1.9	212	3.5	259	3.1	215	2.0	238	9.1	267	1.5	161	5.2	286	5.6	286	1.4	296	4.3
2,000	246	2.2	199	1.7	307	0.6	204	3.8	242	3.2	226	3.9	247	9.6	239	1.0	175	4.9	294	7.4	282	3.1	293	6.0
2,500	207	3.2	214	5.3	89	0.7	218	3.5	212	4.8	215	2.0	253	7.4	177	1.1	198	3.6	298	9.1	295	3.1	294	6.7
3,000	184	3.5	212	7.9	91	1.5	209	3.3	------	------	187	1.4	262	6.7	157	2.0	234	3.5	298	9.3	276	3.6	290	8.1
4,000	168	4.4	226	9.7	70	2.6	259	3.1	------	------	163	1.5	279	7.5	146	3.3	254	5.3	304	12.7	249	4.8	292	8.0
5,000	161	4.8	219	11.1	------	------	177	0.9	------	------	59	2.3	311	13.6	128	4.9	232	7.5	305	11.2	260	4.0	293	7.6

RIVERS AND FLOODS

By RICHMOND T. ZOCH

(River and Flood Division, MONTROSE W. HAYES, in charge)

A few minor floods occurred in Pennsylvania, South Carolina, and Mississippi; practically no damage was caused by these floods. A moderate flood occurred in the Nolichucky River in Tennessee; more than $175,000 of damage was done there.

Most of the rivers of the United States were low. The lowest stages of record for the month of July were recorded in the Missouri River at Sioux City, Kansas City, and Hermann; in the Ohio River at Cairo, and in the Mississippi River at Keokuk, Hannibal, Grafton, St. Louis, Chester, Memphis, Helena, and Vicksburg. At Little Rock, Ark., the lowest stage of record for all months was recorded. These low stages do not necessarily mean comparatively low discharges, as the following remarks of the official in charge at Little Rock show:

This office has not received any statement of the number of second-feet passing, but think it is about the same as in previous years when the river was at extreme low water, about 800 or 1,000 second-feet. The channel has been cutting a shorter course about 2 miles below the gage and it is probable that the resulting increased rate of flow would cut the channel deeper, letting the pool opposite Little Rock down.

Heavy rains over the Bear Creek watershed near Denver, Colo., resulted in floods which caused the loss of six lives and over $50,000 of property.

Table of flood stages for July 1934

[All dates are in July]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
	Feet			*Feet*	
Lackawaxen: Hawley, Pa	6	28	28	11.0	28
Santee: Rimini, S.C	12	12	14	13.5	13
		19	21	13.4	21
		27	27	12.0	27
Savannah: Ellenton, S.C	14	14	14	14.9	14
EAST GULF OF MEXICO DRAINAGE					
Pearl:					
Edinburgh, Miss	20	9	12	21.6	10
Jackson, Miss	18	16	20	19.6	18
MISSISSIPPI SYSTEM					
Ohio Basin					
Nolichucky: Embreeville, Tenn	10	15	15	12.6	15